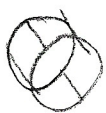


9/13.

로렌조

<small>K</small>	가	가	가	가	가	가
<small>N</small>	나	나	나	나	나	나
<small>D</small>	다	다	다	다	다	다
<small>L</small>	라	라	라	라	라	라
<small>M</small>	마	마	마	마	마	마
<small>B</small>	바	바	바	바	바	바
<small>S</small>	사	사	사	사	사	사
	아	아	아	아	아	아
<small>J</small>	자	자	자	자	자	자
<small>Ch</small>	차	차	차	차	차	차



K

C

카

카

카

카

카

카

T

타

타

타

타

타

타

P

파

파

파

파

파

파

H

하

하

하

하

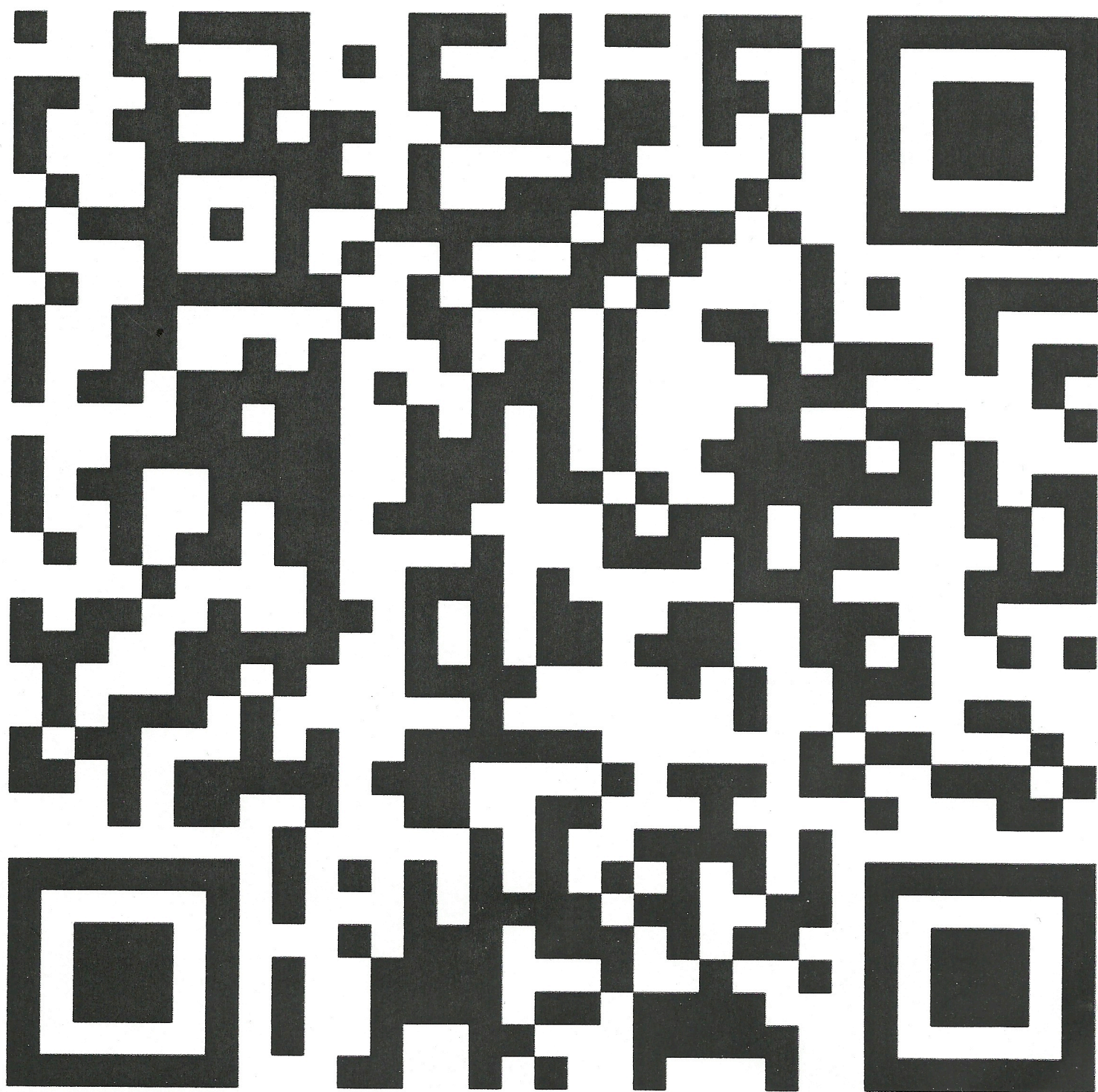
하

하

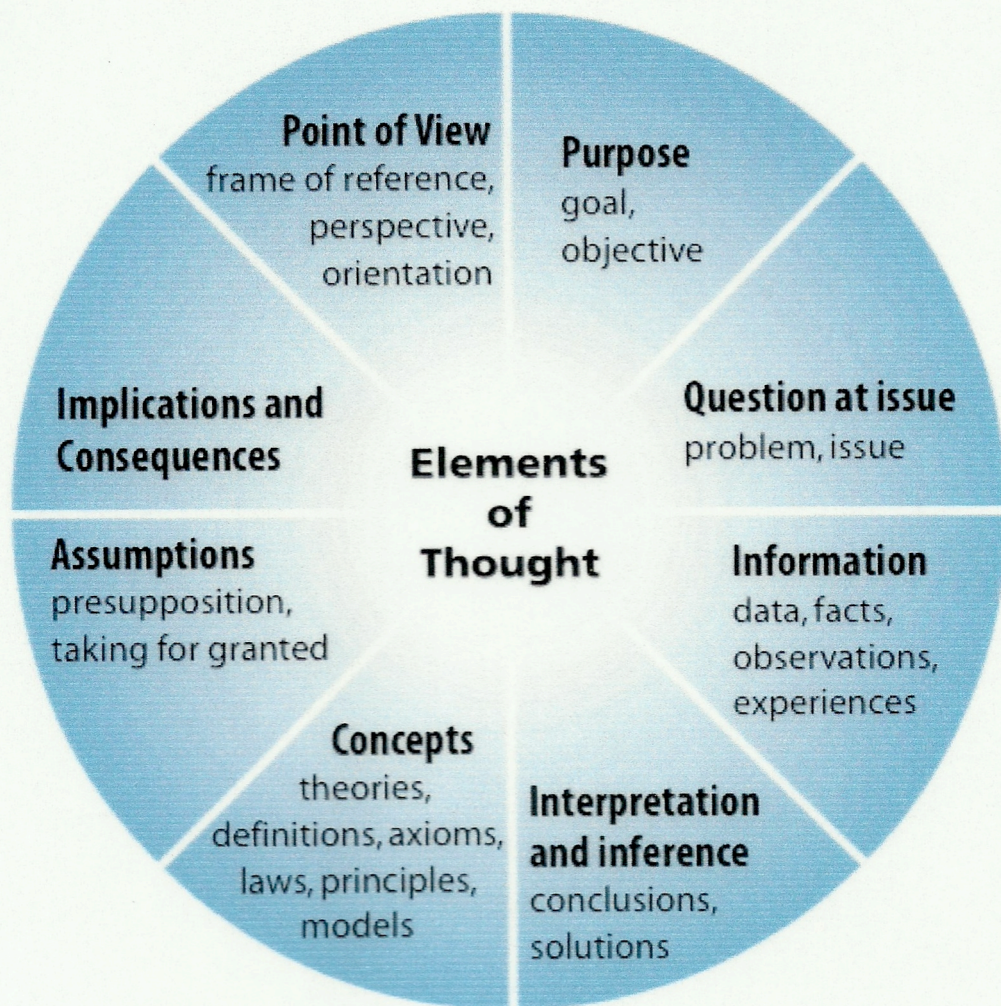
1	일 <small>il</small>		하나 <small>ha na</small>	
2	이 <small>ee</small>		둘 <small>dool</small>	
3	삼 <small>sam</small>		셋 <small>set</small>	
4	사 <small>sah</small>		넷 <small>net</small>	
5	오 <small>oh</small>		다섯 <small>dah sot</small>	
6	육 <small>yuk</small>		여섯 <small>yeo sot</small>	
7	칠 <small>chil</small>		일곱 <small>il gop</small>	
8	팔 <small>pal</small>		여덟 <small>yeo deol</small>	
9	구 <small>goo</small>		아홉 <small>ah hop</small>	
10	십 <small>ship</small>		열 <small>yeol</small>	

11	십일 <small>ship il</small>	십일	열하나 <small>yeolhana</small>	열하나
12	십이 <small>ship ee</small>	십이	열둘 <small>yeol dool</small>	열둘
13	십삼 <small>shipsam</small>	십삼	열셋 <small>yeol set</small>	열셋
14	십사 <small>ship sah</small>	십사	열넷 <small>yeol net</small>	열넷
15	십오 <small>ship oh</small>	십오	열다섯 <small>yeol dahsot</small>	열다섯
16	십육 <small>ship yuk</small>	십육	열여섯 <small>yeol yeosot</small>	열여섯
17	십칠 <small>ship chil</small>	십칠	열일곱 <small>yeol il gop</small>	열일곱
18	십팔 <small>ship pal</small>	십팔	열여덟 <small>yeol yeodeol</small>	열여덟
19	십구 <small>ship goo</small>	십구	열아홉 <small>yeol ah hop</small>	열아홉
20	이십 <small>ee ship</small>	이십	스물 <small>sumool</small>	스물

10	십 <small>ship</small>	십	1000 <small>Cheon 천</small>	천
20	이십 <small>ee ship</small>	이십	10000 <small>Man 만</small>	만
30	삼십 <small>samship</small>	삼십	서른 <small>sa lun</small>	
40	사십 <small>sah ship</small>	사십	마흔 <small>ma hun</small>	
50	오십 <small>oh ship</small>	오십	쉰 <small>shi un</small>	
60	육십 <small>yukship</small>	육십	예순 <small>ye sun</small>	
70	칠십 <small>chil ship</small>	칠십	일흔 <small>il hun</small>	
80	팔십 <small>pal ship</small>	팔십	여든 <small>yä dun</small>	
90	구십 <small>gooship</small>	구십	아흔 <small>ah hun</small>	
100	백 <small>back</small>	백	백 <small>bek</small>	



The Elements of Thought



Used With Sensitivity to Universal Intellectual Standards

Clarity → Accuracy → Depth → Breadth → Significance
Precision
Relevance

Idea # 16:

Model skilled thinking for your students.

It is most likely the case that your students are unaware of what highly skilled thinking looks like. They have probably rarely seen it modeled, and even then it was probably only implicitly modeled. Rather than just thinking well in front of students, we advocate explicit modeling of skilled "moves." This means not only thinking aloud in front of students, but also calling attention to the "moves" you are making.

Examples: In modeling disciplined thinking you might make moves such as these:

- (*focusing on purpose and question*) "If I had to solve a problem like this, I would first make clear what my main purpose is as well as the precise question I am trying to solve. So let's take a couple of minutes to do that..."
- (*focusing on implications*) "Whenever I am thinking through an important complicated decision I always want to think through the implications of the various decisions I might come to. In other words I want to figure out what the likely consequences would be if I reasoned to this decision or that decision."
- (*focusing on concepts*) "I realize that it is important to understand how authors are using concepts in their thinking. I therefore want to clarify the key concepts in the articles and books that I read. Let's think aloud about what the author means when she uses the concept of x. I'll begin. Perhaps she means y. Is that an accurate interpretation?"
- (*focusing on clarity*) I always want to be clear about the issue I am dealing with, about what another person is saying, about what I am reading, etc. Therefore when I am unclear in a discussion, I ask questions of clarification. When I am unclear about the issue at hand, I focus on clarifying the question – either by re-expressing the question in my own mind or asking others to clarify it. As I am reading, I repeat in my mind my understanding of the author's meaning. I figure out what I understand of the author's meaning. I figure out what I understand and what I don't understand about what the author is saying.

- (*focusing on accuracy*) Whenever I am reasoning through a problem, I want to make sure I am using accurate information. Whenever it seems that other people are using questionable information in their thinking, I want to check to see if the information is accurate rather than simply accept it as true. I might ask the person how they know the information they are using is accurate. Or I might just look up the information for myself — depending on the circumstances.
- (*focusing on relevance and precision*) "Whenever I am reasoning through a problem, I want to make sure I use information relevant to the problem. I do this by writing out the question at issue as precisely as possible and then writing down the information I am using in thinking through the problem. In this way I can check to make sure the information is relevant to the precise question I am dealing with.
- (*focusing on breadth*) "In reasoning through this issue it seems that it is important that I consider multiple ways of looking at the issue. I know this because whenever I am dealing with a problem that can reasonably be viewed from multiple relevant viewpoints I want to make sure I fully consider those viewpoints. If I fail to do so I will be reasoning in a narrow-minded way. So let me begin by stating the basic arguments that can reasonably be made with respect to this issue. Then you can see whether I have left out an important perspective.

For other intellectual moves you intend to model for students, refer to the questions that derive from the elements of reasoning and the intellectual standards (see suggestions below).

In modeling the thinking you want students to learn, you should point out exactly what intellectual moves you are making, why you are making them and invite students to critique the moves you are making. One strategy for doing this is to have the students observe the questions you are asking and the thinking you are displaying and then discuss the moves you made. In any case, you want to make it clear that your primary intention is to help students learn to use these "moves" in their thinking while learning and applying the content of the course.

Idea # 27:

Design tests with the improvement of student thinking in mind.

In planning tests, be clear about your purpose. A test in any subject matter should determine the extent to which students are developing useful and important thinking skills with respect to that subject. The best tests are those most reflective of the kinds of intellectual tasks students will perform as they apply the subject matter to professional and personal issues in the various domains of their lives. Since "multiple choice" tests rarely can assess what life situations require, they are rarely the best overall test, though they can assess some supplementary understandings at an entry level.

One type of test that does get at more realistic skills is an analytic test of the students' ability to take thinking apart and elaborate accurately on each of its elements. Another type tests the student's ability to evaluate those elements using intellectual standards. In other words, students should learn how to analyze and evaluate thinking within the subjects they are studying.

Part One. Analyzing Thinking. After students have learned some of the fundamentals of critical thinking, and have reasoned through the logic of several chapters and/or articles you have given them, you might have them figure out the logic of an article during one class period (or the logic of a section of the textbook). Through this test, you can determine the extent to which they can accurately state an author's purpose, key question, etc. (see Idea # 15).

Part Two. Evaluating Thinking. Having completed part one above, you might then have students evaluate the author's logic using the following format:

- Is the question at issue clear and unbiased? Does the expression of the question do justice to the complexity of the matter at issue?
- Is the writer's purpose clear?
- Does the writer cite relevant evidence, experiences, and/or information essential to the issue?
- Does the writer clarify key concepts when necessary?
- Does the writer show a sensitivity to what he or she is assuming or taking for granted? (Insofar as those assumptions might reasonably be questioned)?
- Does the writer develop a definite line of reasoning, explaining well how he or she is arriving at his or her conclusions?
- Does the writer show a sensitivity to alternative points of view or lines of reasoning? Does he or she consider and respond to objections framed from other points of view?
- Does the writer show a sensitivity to the implications and consequences of the position he or she has taken?

In giving this sort of test, we are trying to determine whether students are theoretically capable of entering viewpoints that differ from their own. You can give multiple tests using this same format by changing only the written piece to be analyzed (selecting, of course, pieces whose point of view is significantly different from that of most students). Of course, this test does not and cannot determine whether a student will actually empathize with opposing views in real life situations (especially when their vested interest is involved).

Idea # 28:

Systematically question students using a Socratic approach.

The oldest, and still the most powerful, teaching tactic for fostering excellent thinking is Socratic teaching. In Socratic teaching we focus on asking students questions, not giving them answers. We model an inquiring, probing mind by frequently asking probing questions. Fortunately, the abilities we gain by focusing on the elements of reasoning, prepare us for Socratic questioning. Remember, there is a predictable set of relationships that hold for all subjects and disciplines, since every subject has been developed by those who had:

- shared **goals** and objectives (which defined the subject focus),
- shared **questions** and problems (whose solution they pursued),
- shared **information** and data (which they used as an empirical basis),
- shared modes of **interpreting** or judging that information,
- shared specialized **concepts** and ideas (which they used to help them organize their data),
- shared key **assumptions** (that gave them a basis from which to collectively begin), and
- a shared **point of view** (which enabled them to pursue common goals from a common framework).

Each of the elements represents a dimension to be questioned. We can question goals and purposes. We can probe into the nature of the question, problem, or issue that is on the floor. We can inquire into whether or not we have relevant data and information. We can consider alternative interpretations of the data and information. We can analyze key concepts and ideas. We can question assumptions being made. We can ask students to trace out the implications and consequences of what they are saying. We can consider alternative points of view. All of these, and more, are the proper focus of the Socratic questioner.

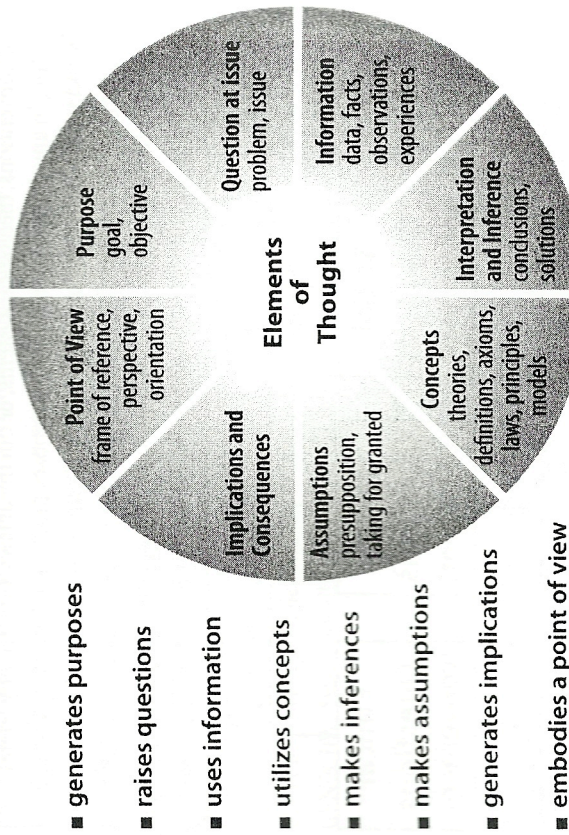
As a tactic and approach, Socratic questioning is a highly disciplined process. The Socratic questioner acts as the logical equivalent of the inner disciplined voice of reason (which the mind develops when it develops excellent thinking in any subject). The contributions from the members of the class are like so many thoughts in the mind. All of the thoughts must be dealt with and they must be dealt with carefully and fairly. By following up all student answers with further questions, and by selecting questions which advance the discussion, the Socratic questioner forces the class to think in a disciplined, intellectually responsible manner, by continually aiding the students by facilitating questions.

A Socratic questioner should: a) keep the discussion focused, b) keep the discussion intellectually responsible, c) stimulate the discussion with probing questions, d) periodically summarize what has and what has not been dealt with and/or resolved, and e) draw as many students as possible into the discussion.

The Elements of Ethical Reasoning

Ethical reasoning has the same basic structures that underlie all reasoning. If we are to reason well ethically, we must learn to identify and assess our use in ethical reasoning of these basic intellectual structures.

Here is the basic idea: Whenever we think, we think for a purpose within a point of view based on assumptions leading to implications and consequences. We use ideas and theories to interpret data, facts, and experiences in order to answer questions, solve problems, and resolve issues. In other words, all thinking:



Through our understanding of these elements, we can better analyze ethical reasoning. We can target our ethical purposes. We can formulate our ethical questions in various ways to identify the question that best embodies the issue. We can determine whether we have the information we need to solve the ethical problem. We can identify the inferences we are making and consider alternative inferences or conclusions. We can figure out the ethical concepts and principles we are using to reason through the issue. We can check our assumptions before coming to conclusions. We can determine whether more than one ethical viewpoint needs to be considered. And we can follow out the ethical implications of our decisions.

The Logic of Ethical Reasoning

